

COMMENTS  
Foundations of Algebra Teacher Forum  
January 12, 2016

Regarding **Instructional Models**, one or more participants reported:

- teaching the course on a block schedule
- teaching the course on a yearlong schedule
- variance in instructional models – **4x4**: 1<sup>st</sup> Block Foundations of Algebra, 2<sup>nd</sup> Block Algebra I; yearlong Algebra I and semester long Foundations of Algebra; 90 minute classes yearlong which is working great; **AB Block**: 2- 70 minute classes and 2- 40 minute classes each week
- teaching Foundations of Algebra and Mathematics of Finance in same class period and using Foundations of Algebra modules for both, while addressing the Mathematics of Finance standards for those receiving credit in the Mathematics of Finance course
- teaching Foundations of Algebra in 9<sup>th</sup> grade first semester for students who will not take math in 10<sup>th</sup> grade until second semester (NOTE: the Foundations of Algebra teacher is trying to establish a support course for 10<sup>th</sup> grade first semester)
- thinking that Foundations of Algebra needs to be taught yearlong – even within a 4x4 schedule OR Foundations of Algebra needs to be taught 1<sup>st</sup> semester, then Algebra I second semester
- teaching a maximum of eighteen students, but indicated that even that number of students is still way too many
- teaching thirty-five students in a Foundations of Algebra course, which led to the implementation of station teaching and parallel teaching
- limiting enrollment in Foundations of Algebra to first-time ninth graders
- spending an average of 3 ½ hours daily in planning lessons for the course
- completing all modules, but suggesting that a heavy emphasis on modules 1 and 2 will reduce repetition in other modules by 30 to 40%.
- teaching modules 1 and 2 as scripted
- spending the first half of the course addressing topics from modules 1 and 2
- having only four weeks left to teach the last 2 modules
- going all the way back to the basics, to elementary standards, and using number lines
- thinking that more emphasis needs to be given to place value – how it's taught
- concluding that only so much can be taught, so the focus needs to be on the bigger/meatier standards that cover more ideas
- knowing what is needed but realizing that there is simply not enough time
- pressing to get through the curriculum as time is an unwieldy constraint
- dividing time between exposure and correction of misconceptions
- that some Foundations of Algebra students have serious issues with conceptual misunderstanding
- concluding that Foundations of Algebra teachers must continually balance exposure versus time
- that the reading levels of Foundations of Algebra students are really low

- realizing that students are not making connections; for example, when taught that  $5 - 7 = -2$ , students do not connect this understanding to  $5x - 7x = -2x$
- that every day seems like a blank slate, as students are not making the anticipated connections
- that students struggled when they were taught the process first and then given application problems
- that when manipulatives were used, behavior was poor
- that discipline issues limited the use of manipulatives
- using a program to assess where students are currently and then working from where they are two days each week
- believing that the exposure provided in Foundations of Algebra will result in the recall of some of the content for the next courses
- discerning that individual struggle time and group struggle time gives a teacher time to work with a student/group that needs some additional attention
- that to handle students at different places, groups were established based on what students needed help with and what a Ticket Out the Door (TOTD) assessment at the end of the class revealed; that co-teaching helps with differentiation
- wondering if students could work on different modules simultaneously
- concluding that high school teachers who have taught Algebra I/Coordinate Algebra know what the students need to know, but not having taught anything except high school explains a struggle with the strategies and use of manipulatives inherent in Foundations of Algebra; that teachers need help with both
- questioning whether high school teachers might expect too much of this group of students
- that decisions about the goals for the course need to be studied – is this course about exposure, growth, or competence?

Regarding **Successful Instructional Strategies**, one or more participants reported:

- addressing the components of a safe classroom environment where opinions are respected
- surmising that teacher attitude feeds the attitude of students – helping students to realize that their teacher likes math changes their outlook
- concluding that opportunities for students to feel successful must be routinely and purposely included
- discovering the importance of routine
- approaching classroom management with established routines and procedures
- having a conversation with students regarding growth versus achievement
- recognizing the importance of productive struggle for student achievement
- understanding the positive impact of attendance at extra-curricular activities in which Foundations of Algebra students participate
- enlisting student interns and college students for tutoring
- finding spiraling the curriculum to be an opportunity for students to revisit concepts based on their group assignment
- using Number Talks to teach vocabulary – both content and academic terms
- creating card sorts to build vocabulary
- teaching students to use a notebook as guided notes enhance understanding and then allowing them to use their notebooks for quizzes
- creating standards mastery progress charts; using progress monitoring charts for accountability
- having students place a sticker beside their name when they mastered a particular standard on a mastery poster posted in the classroom

- the use of bell ringers, warm-ups, and extra credit problems
- finding anything related to math to prompt Number Talks discussions
- incorporating Number Talks into lessons – also using Math Talks and Pattern Talks
- routinely using formative assessment lessons (FALs)
- creating individual toolkits of manipulatives for student use
- exploring *Math in the Fast Lane* strategies
- using the *See-Think-Wonder* routine for learning
- not trying to implement all the strategies at once, but rather introducing new strategies weekly
- modeling K-8 strategies
- identifying important areas for review
- understanding that it is productive to view each standard in different ways and to ask for different ways in applications
- using K-5 frameworks to clarify the elementary standards in the course
- applying number lines to many situations and as frequently as appropriate
- including YouTube videos, grid paper, and discovery to improve the understanding of place value and for solving equations
- applying the RACE problem solving model
- establishing small, flexible groups which were data driven
- when using stations, moving the stations and not the students
- employing a small group pullout for remediation while other students are involved in tasks at stations
- routinely using alternating teacher and parallel teaching models
- not using every module tasks with every student, but selecting tasks based on student needs
- asking students to explain, prove, and justify to improve retention
- having students record their Ticket Out the Door (TOD) assessment responses on sticky notes for easy sorting
- because differentiation is a challenge, using TOD assessments to arrange students by their level of understanding and to assign different activities for each group
- using ST Math – a high school intervention program - to fill the gaps
- assigning student ‘jobs’ – calculator collector, book collector, timer
- engaging students through frequent use of 3-Act Tasks
- using reward systems and competitions
- allowing for revision of assignments as needed
- having students explain in writing about mistakes made on assessments
- using student names in problems to customize the activity
- that interactive journaling was very positive

- journaling in about 80% of the class periods – at different times within the class period - to clearly see student misconceptions and to address them through Number Talks the next day
- using journal writing to review topics, solicit explanations, and create examples
- using journal writing daily at first and then tapering off to once a week
- asking students to teach – adding fractions, for example
- using student work as a starting point
- employing bell ringers to review standards previously taught, and for pre-assessment, acceleration, and differentiation
- having students write their bell ringer responses on notecards for subsequent small group discussions of selected notecards; having small groups note correct and incorrect parts and provide explanations of their reasoning to be shared with the whole class
- making purposeful mistakes for students to catch
- using student names to help students remember principles (e.g. Jason’s Rule)
- relating fractions to food
- using money to engage students, for examples and problems
- engaging students by having them work at the board
- employing social media situations that need math
- discussing connections to real-life via student submitted math-related articles and current events
- routinely using manipulatives
- encouraging students to create math rap videos
- fully engaging students through games
- allowing students to peer-teach
- encouraging dialogue among students; promoting student-led discussions
- connecting content to real-life situations
- employing technology (e.g., Nearpod, Leslie Fisher Technologies, GoFormative, LearnZillion student accounts)
- relating math to sports
- giving rewards for completing homework assignments
- that manipulatives frequently produced aha moments for students
- employing self-assessments like *I’ve got it – Not at all - Not yet*
- administering the IKAN to continually assess weakest areas; then using pre-teach, practice, and technology to improve weak areas
- administering GloSS in lieu of pre- and post- assessments for modules
- collecting and using feedback continuously
- adding constructive response items to formative assessments
- employing quick data collection devices (e.g., Plickers, clickers) for immediate feedback
- employing Nearpod quick polls for assessment purposes

- using a jar of marbles to award quiz points when students found errors – naming a marble jar manager

Regarding **Curriculum**, one or more participants reported:

- thinking that module 5 is on a different level than what high school teachers traditionally teach; teachers will need to look deeper at the module and not teach what we assume is expected; lessons need to be based strictly on the standards addressed in the module
- concluding that the module resources and module assessments did not seem to match – particularly the fractions questions in module 1; both the teacher and students felt very defeated after completing the module 1 assessment
- observing a big gap between Foundations of Algebra and Algebra I
- that there seems to have always been a gap between 8<sup>th</sup> and 9<sup>th</sup> grade; arithmetic gets in the way of algebra in Algebra I
- recognizing that there are students who have no clue about fractions
- wondering which topics are the most important
- wondering if teachers should attempt to cover all of the curriculum or focus heavily on those topics that drive most of the big ideas
- that students are not being taught in the manner IKAN is asking questions about place value
- that delineating the most important ideas of the course continues to be difficult
- that while Foundations of Algebra focuses on number sense, the link to Algebra I is still unclear
- that while the Foundations of Algebra curriculum starts with fractions, students might need to go back even further for a clear understanding
- concluding that teachers can't expect students to go from 3<sup>rd</sup> grade to 9<sup>th</sup> grade in one year when they couldn't do it in 6 years
- organizing curricular ideas to follow the frameworks exactly, following the flow of the modules, but rearranging the inside of the modules at times
- deducing that the Foundations of Algebra course is set up to help students be successful
- finding module 1 to be very heavy and being worried about getting through module 5
- observing that the tasks require a lot of teacher direction
- completing every task in modules 1 and 2 but now having only four weeks to complete modules 4 and 5 will prompt changes in year two
- observing that the course resources seem to emphasize number sense and do not offer a clear link to algebra

Regarding **Assessment**, one or more participants reported:

- a struggle to complete the course curricular expectations which is causing concern about the SLO and TKES.
- not completing the course curriculum on block, but not being required to administer a course SLO
- uncertainty as to what percent of each topic is on the SLO
- that the course pre-assessment indicated that students in Foundations of Algebra are extremely deficient in reading skills and have low Lexile scores
- that the SLO and other GOFAR assessments assume that students are reading on the 9<sup>th</sup> grade level and that is not the case
- that while the goal is for students to develop number sense, students shut down on the assessments because they could not read/understand the questions
- using both the pre- and post- for all modules and the course, which resulted in a sacrifice of twelve instructional days

- administering the GloSS assessment, but being concerned about the time the testing took from instruction
- having trouble getting to the assessment materials on GOFAR
- being able to get to module 1, and then developing assessments for remaining modules based on GOFAR Module 1
- that there is no guide for what should be tested in each module and how it will be tested;
- having no access to GOFAR
- using USATestPrep but finding that the assessments were not aligned to the Foundations of Algebra modules
- finding that the module assessments and module frameworks did not seem to match - particularly the fractions questions in module 1
- discovering that most of the GOFAR items are 2- and 3- step problems and at a high DOK level
- noting that the framework tasks are DOK 2 and that the GOFAR items are DOK 3
- creating assessments for each module and for the course
- being concerned about the structure and rigor of the SLO versus the module assessments; choosing to create own assessments
- recognizing that typically students do well on 8<sup>th</sup> grade CRCT and quite poorly on the 9<sup>th</sup> grade EOC assessment
- that because the GOFAR assessment items were multiple choice and multi-step problems, it was difficult to determine where the students were making mistakes and to assess what the students actually knew
- using a teacher-generated assessment to assess what the students did know
- using the pre-assessment to determine if a student needed work in a certain module
- noticing that students had difficulty reading/understanding the test questions; suggesting that a basic skills test might be more appropriate
- seeing improvement on the IKAN in number sense and a continued struggle with fractions
- frustration with the fact that GOFAR assessment questions were much more rigorous than what the frameworks require and that the assessments just did not match what the modules require
- having a preference for teacher-generated assessments, but needing to ensure that the assessment items are comparable to those on the SLO
- observing that the Lexile level is too high on the GOFAR assessments
- that because Foundations of Algebra students are not familiar with some of the vocabulary used, they are being set them up for failure
- grading based on growth, not achievement
- recreating the state assessments on google forms and using the data to inform teaching
- that assessment questions need to be two-part items with an explanation or justification required and need to be precisely aligned with the standards
- discovering that DOE does not mandate the use of GOFAR assessments and that the assessments were provided solely to support implementation of the course
- finding it difficult to determine in which standard there continues to be misconceptions as the module assessments assess more than one standard
- observing that teachers will need to give consideration to computation versus confidence as the GOFAR assessments will not give students the confidence they need to pass Foundations of Algebra
- administering a diagnostic every two weeks
- realizing that not everyone was aware that there is a test blueprint for the GOFAR assessments in GOFAR

Regarding **Professional Learning**, one or more participants reported:

- that Jackie Henning, Mathematics Mentor at Griffin RESA, is conducting training on each module of the course and will offer training for module 5 in March
- that Metro RESA provided exemplary training of the modules and would suggest an ongoing training scheduled for every month or every other month
- that because it is tough for teachers to teach at the K-8 level with a 9-12 background, perhaps Foundations of Algebra teachers could visit K-8 classrooms to observe successful elementary strategies and to learn how to use manipulatives
- understanding that this course accentuates the need for K-9 vertical planning
- that instituting webinars for Foundations of Algebra teachers would offer a beneficial support tool by emphasizing roadblocks and typical misconceptions
- benefitting from Tony Wagner's Rigor Redefined Video
- that Sally Burran's K-8 Numeracy Workshop at GLRS focuses on benchmark fractions, fraction bars, and discovery for retention
- that a RtI Progress Monitoring Workshop is scheduled in Macon

Regarding **Student Success**, one or more participants reported:

- that all students passed the course because the district said they would
- that one district mandated that all students pass, but didn't tell the students about the mandate
- establishing a grading scale based on student growth
- that the course description for Foundations of Algebra explains that the course is not punitive
- that there were course failures in one district
- being concerned about how to keep the course from becoming a 'dumping ground'
- looking for clarity about expectations for students who pass Foundations of Algebra
- determining that struggling with lower level standards is causing failures in 9<sup>th</sup> grade; that students understand 9<sup>th</sup> grade content but are missing problems due to the lack of understanding of embedded standards taught in earlier grades
- being confident that the Foundations of Algebra course is set up to help students be successful in high school mathematics
- that Foundations of Algebra students are fragile learners who need our constant support and our praise for small successes; that we can take different paths to ensure their success
- that Foundations of Algebra students still need to be challenged
- thinking that students who were chronically absent should not be passed simply because the district says they should
- that we can't teach Foundations of Algebra students everything
- that Foundations of Algebra students have a hard time transferring knowledge
- withholding scores on GOFAR assessments because of fear that students' poor performance would break their spirit

Regarding **Resources**, one or more participants reported:

- finding tasks in the last two modules that covered many standards and being confused as to what the students were expected to do
- on progress monitoring in RtI which includes three batteries of tests with 12 tests in each battery - the first level being basic skills
- on the benefit of the RtI assessments being that students are free to show what they do know without penalty or fear of failing the class
- finding out that the DOE does not mandate the use of state teacher-created resources

Regarding **Enrollment Criteria**, one or more participants reported:

- that based on IKAN, all ninth graders should be in the course, but based on CRCT, few if any ninth graders should be in the course
- thinking that there should not be a hard cap on enrollment
- that teacher recommendation needs to be an additional component in the enrollment process to screen out students who did not take the state assessments seriously
- the suggestion that there should be more flexibility in enrollment
- that in one district only four eighth graders met the enrollment and that the other students enrolled were previous ninth graders who were not successful in algebra
- endorsing the idea of including teacher recommendations in the decision making process
- that transfer should be an expectation for students who have clearly been misplaced
- delight in hearing that student identification for Foundations of Algebra enrollment will become a LEA decision in 2016-2017